



Coil punching and shearing line. Open House images by Elli Heimonen Photography.



PUNCH, CUT AND BEND



Jan Tapanainen, CEO, Pivatic Oy.

Pivatic's CEO, Jan Tapanainen, outlines the company's latest projects, strategic initiatives and new investments to ISMR at Blechexpo/Schweisstec.

ISMR SAYS: *"Pivatic has been investing heavily in new staff, a bigger assembly area at its Hyvinkää site in Finland and a range of new R&D projects/lines for global customers."*

Pivatic Oy designs, manufactures and markets punching, cutting and bending machines, as well as lines, for the sheet metal manufacturing industry. Its solutions are tailored to customer requirements and designed for productivity and sustainability. A member of The Ursviken Group, its production facilities and headquarters are at Hyvinkää, Finland. It also has a wide global sales and partner network of more than 30 representatives.

Pivatic's punching roots go back to 1975 when it was established as Toolsystem Ky producing quick-change tooling systems for sheet metal presses. In 2015, it celebrated its 40th anniversary with over 450 production lines delivered globally and a strong sales and partner network established in over 27 countries. Today, it offers complete automated solutions with a wider selection of technologies and can integrate storage systems (Remmert), panel benders (RAS) or

rollforming equipment (Samesor) and coil-fed lasers (Eagle) into its lines to increase flexibility for small batch or kit production.

ISMR met Pivatic's CEO, Jan Tapanainen, at this November's Blechexpo/Schweisstec exhibition in Stuttgart. He outlined some of the company's latest new projects, strategic initiatives and investments to ISMR, along with his thoughts on global markets, trends, challenges and opportunities.

TAKE A GREEN LEAP



ISMR: Which investments have you made over the past two-three years (machine tools, factory, staff etc.)?

JT: We have been investing in more staff, especially in our software engineering department. We are now ready to expand our factory in Hyvinkää, Finland, and double the assembly hall area. Our current production and office space is 4600 square metres. We have also been continuously increasing our R&D activities and aim to have some new developments ready to launch at the EuroBLECH exhibition in Hanover next year.

We also continue to develop partnerships with other manufacturers on our production lines. For example, we have been working with Polish laser manufacturer, Eagle, on a new coil laser cutting line for a customer in Finland and Sweden. This large project incorporates a new rapid 2D laser built especially for coil processing as well as automatic and reliable sorting. Material utilisation is much better, with very little scrap and waste. We are planning to bring it to the EuroBLECH exhibition in Hanover next year.

Our other R&D projects are focused on software and dynamic nesting; coil straightening and a fully servo electric bending machine. These are important projects for the future. We always try to find out what customers need when we start discussions or invest in R&D. We have an engineering mindset aimed at finding customised solutions to challenges; very seldom do we say 'no'.

ISMR: What are your views on the current global business climate/markets for sheet-metal professionals? How do you view 2024?

New coil punching and shearing solution

Pivatic is now offering a new coil punching and shearing solution to manufacturers.

"Pivatic systems give you multiple options to run your parts. Using advanced nesting, users may choose the part type, amount and the order in which they want the parts to be produced. All parts of the same material can be produced from the same coil width, nested side-by-side. After the Pivatic double punching process, material is cut to length (CTL) from the coil by a shear," explained Pivatic.

Coil nesting systems give users multiple options to run their parts. They may choose the part type, amount and the order in which the parts exit the system. All parts of the same material can be produced from one wide coil, nested side-by-side.

To nest parts side-by-side on a strip, Pivatic uses a CTW (Cut-to-Width) station to shear and separate the nested parts. All parts are stacked or buffered

automatically in piles on top of pallets for easy transportation or transferred directly to follow-up processes. Waste is minimised by filling the coil with nested parts. For high-quality part production, the CTW can also act as an edge trimmer prior to punching in a PivaPunch PCB Punching Center for Blanks.

By separating each process step, Pivatic aims to deliver significant leaps in productivity. This solution is being delivered for locker manufacturing but similar solutions have also been delivered to manufacture parts for HVAC; domestic appliances; commercial appliances; steel doors; office furniture and electrical enclosures.

"We have been working with coil for years and are true pioneers in using coil in the sheet metal industry to reduce waste and optimise usage and material etc. We also design coil-coated/pre-painted material processing lines for customers," Pivatic told *ISMR*.

JT: Three years ago, when COVID-19 started, the sheet metal industry had a tough time. Mid-sized companies like ours were unable to travel and meet customers. Luckily, our existing customers placed repeating orders with us. The sheet metal industry then faced spiralling material and component cost increases last year, and long delivery times for some customers due to supply chain disruptions (especially for parts containing electronics and semi-conductors). This year

and last year, interest rates have shot up which have negatively affected capital investments.

This year, consumption in Europe has been slowly stabilising. Some of our customers, who were running high volumes, were not investing up until the Summer and were delaying, cancelling or postponing projects. Despite this, we kept on bringing out new line innovations and better value solutions.

I am pleased to report that, over the last two months, the situation has changed and a lot of 'on-hold' projects have now been reactivated

Coil nesting.





Pivatic held an Open House in Finland from 31 October to 1 November 2023.

with decisions expected at the end of the year. This is partly because our long lead times (10-14 months) mean that customers need to make decisions now for operations in 2025 which industry generally thinks to be much better. This puts us on a different cycle than most companies and stand-alone machine builders here at the exhibition.

Our order backlog is strong for next year. If things go as I expect by the end of the year, then 2024 should be a better year for us.

ISMR: Please outline your strategic and technical focus for the company.

JT: Our main customer areas are in North America and Europe. We have installed several lines in China, South Korea and India. We have a sister company in the United States (our main market) and a branch office in Germany (DACH is our second biggest market) and Scandinavia.

In terms of our strategy, we have been looking closely at Asian markets (especially India). Basically, we address markets for buildings/construction (with steel facades, elevators etc.); steel furniture; appliances; electrical cabinets; HVAC (heating, ventilation and air conditioning) and any infrastructure that needs sheet metal parts.

Our vision is to be a trusted partner for highly automated, productive and efficient sheet metal fabrication solutions. We make stand-alone machines as well as tailored lines. Our strength is in significantly reducing cycle times and waste for part production. We continuously investigate how we can do this more rapidly and efficiently, with higher quality, sustainability etc.

In terms of technological strategy, we are currently focusing on five main R&D projects (continuous improvement of software modules; the coil processing laser; dynamic nesting; coil straightening and a fully servo-

A refrigerator assembly from a Pivatic line.



electric bending machine). Software solutions are becoming more and more important.

ISMR: Which trends do you see developing in global sheet metal markets?

JT: We see a move towards more automation/robots on lines as well as easier-to-use systems in a climate of labour/skills shortages. We use a lot of robots on our lines for operations such as palletising; packing; marking; bending, welding, assembly etc. More of our customers are using them and like to have lines that can do everything (true lights-out operation).

We also see a drive towards lower maintenance costs and prolonging machine lifetimes through modernisation and upgrades. A 25-year-old machine can now be amortised through modernisations and retrofit. That is a long lifetime for a machine. Currently, we have an all-time high order book for line modernisations. It is a strong trend that I see and a good investment for customers when times are slower and they are preparing themselves for an upturn.

ISMR: Where do you see the greatest challenges and opportunities?

JT: We run regular Open Houses in Finland to showcase our technologies to customers and partners. Our last one ran from 31 October to 1 November 2023. Three production lines/machines were on display. The main themes for the event were: a coil punching and shearing line with stacking; Multitool Profile/Panel Bender and software solutions. These generate opportunities for collaboration.

Interesting industry sectors for us include HVAC (heating, ventilation and air conditioning). This sector takes up 35% of our business and is our biggest revenue sector. Climate change is driving hotter summers and heat pumps are used more and more for heating purposes



L-R, Mika Virtanen, CTO, and Jan Tapanainen, CEO, of Pivatic Oy. EA



Scenes from Pivatic's Open House in October/November.

ISMR: How have you embraced sustainability/energy efficiency in your products, processes and operations?

JT: We have been developing servo-electric punching and bending systems since 2000. Hydraulic machines with hybrid servo technology significantly reduce energy consumption. Servo-electric technology lowers energy costs in Pivatic machines by 40-60% and minimises environmental impact.

On our lines, we also prioritise reducing waste as much as possible. Working with coil means significantly reduced or no waste; no over-processing; minimised defects; no waiting; no need for stock/inventory and minimised need for transportation etc. We are pioneers in using coil (and pre-painted material) to optimise material usage on our lines. Technology should support environmental goals and we try to tackle all these things. This is what we call our 'Green Leap' in technology.

In our forthcoming building project, we are planning to install solar panels alongside our very effective heating system. We believe that we can significantly cut 80% of our energy consumption with solar energy which is significant in a climate of high energy costs.

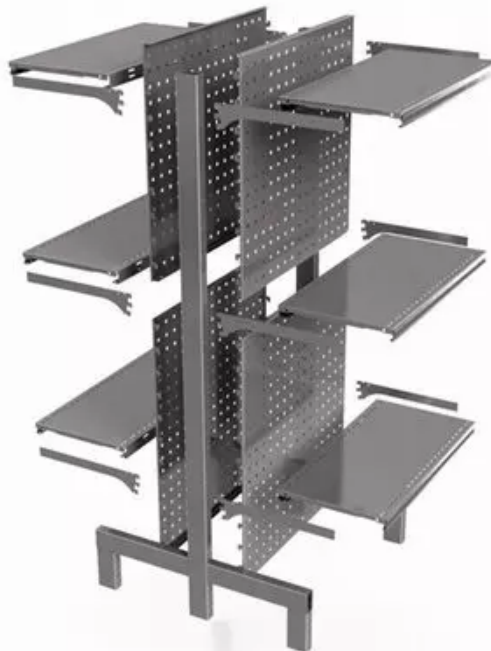
A true 'green' definition is our modernisation and retrofit activities on machines to extend their lifetimes. We can integrate, for example, new software; new console systems, electrification and automation into used Pivatic machinery. Customers can then recycle these machines at the end of their lifetimes (which is typically more than 25 years).

ISMR: Thank you for your time. ■

hence an increasing need for HVAC systems. Many of our biggest customers are working with air-conditioning systems and that market is really growing.

When the Russia-Ukraine war started, gas prices went up and we found ourselves selling lines to boiler manufacturers (which heat water when electricity is cheap). This business has been substantially growing and we see many more opportunities in this market.

A third example is the steel furniture sector. Although you would think that this industry sector is reducing (with more 'work from home' and fewer offices in operation), we have seen a rise in this market mainly due to more postal pick-up services at shops/malls etc. Large steel lockers, which can be made on our lines, installed in certain buildings or shops are used to store post for individuals to collect. This market is growing steadily.



Metal shelving parts from a Pivatic line.

ISMR: What is your approach to Industry 4.0 and enabling technologies such as Artificial Intelligence (AI), Virtual Reality (VR) and Augmented Reality (AR)?

JT: We write and develop our own software; it is a key part of our business. We are therefore very comfortable with digital technologies, Industry 4.0 and digitalisation in general. We use offline programming and Digital Twins regularly to simulate our lines. We also continuously test technologies on the line to make sure they work correctly i.e. checking how rapidly parts can be produced and testing for problems etc. In the engineering phase, we test the software that we develop in Virtual Machines. Visual camera inspection systems are also used to check the quality of parts and profiles.

Artificial intelligence (AI) is an interesting technology that, I am sure, will soon have many applications in manufacturing (e.g. machine programming and MESH systems etc.).



Mika Virtanen, CTO, Pivatic Oy.